REMARKS-General

The specification enables the claimed invention

The Examiner rejects claims 1-20 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The Examiner asserts that a person skilled in the art could not use the specification in order to determine the location on the computer display at which text is being read aloud by the reader. The Examiner concedes that the specification includes the suggestion that voice recognition software can be used to determine the location at which text is being read aloud (O.A., page 2, citing specification page 5, line 10). The Examiner states that it is not clear what voice recognition software could be used for this purpose, or how the location detection is achieved using this software, and believes that the specification represents, at best, an assertion that something might work. The Applicant respectfully requests reconsideration and withdrawal of this rejection since it is not necessary to teach how voice recognition software works (claims 14 and 15), and because the specification describes other means by which the claimed invention is enabled (all other claims).

First, although the specification describes the potential use of voice recognition software to achieve the step of identifying the location at which text is being read aloud, neither the claims (with the exception of claims 14 and 15) nor the specification require computer software to be used in this step. Indeed, the specification states:

> According to the method, changes in the position of a cursor which is associated with a cursor control device are used as a cue for changing the rate of text presentation. In a preferred embodiment, this cursor control device is associated with the position at which text is being read, such that leaving the cursor in a predefined neutral zone does not change the rate of text display, but moving the cursor to a position associated with text coming after that displayed in the predefined neutral zone (to an "acceleration zone") increases the rate of text

> display, and moving the cursor to a position associated with text coming before that displayed in the predefined neutral zone (to a "deceleration zone") decreases the rate of text display. Moving the cursor to another predefined location (in a preferred embodiment, to the left or right edge of the screen) stops text advance. In another preferred embodiment, the cursor movement may be determined by computer-assisted recognition of the location at which text is being read aloud. (Page 4, lines 1-17)
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> . . .
>
> These hardware and software devices provide mechanisms to enhance the utility of the present invention, an improved user interface which could be used with these and other cursor control devices. (Page 5, lines 15-17)

Thus, the embodiment that is described is not necessarily one that uses computer controlled voice recognition software for the purpose of identifying the location at which text is being read, but is one in which a cursor control device is associated with the location at which text is being read. According to the application:

> The cursor position which corresponds to the position at which text is being read may be determined by any cursor control device, including one which responds to eye, head or hand movements, or to audio input. (Page 9, lines 15-18)
>
> In a preferred embodiment of a teleprompter device, the cursor position may be determined by voice recognition software or other computer-assisted devices that is used to identify the location within a text that is being read aloud. Thus, A human user may also control a different type of cursor control device to specify the location at which text is being read aloud. (Page 21, lines 19-25)

Thus, the invention that is enabled includes the use of cursor control devices that are controlled by eye, head or hand movements, or by audio input. The limitation that text is being read aloud does not necessitate the use of voice-recognition software. One simple means by which the location-determining step could be performed would be if a second individual listened to the person reading aloud, and by hand moved a mouse or trackball such that the cursor position corresponded to the location at which text was being read. In such an embodiment, the invention would vary the speed at which text

was presented according to the location at which it was being read aloud. The application also directly enables (via its description of eye-tracking devices well known in the art) the use of cursor control devices that respond to eye and head movements to identify the position at which text is being read. The limitation that said text must be read aloud does not reduce this enablement—it merely limits the claim to the combination of circumstances under which the position at which text is being read (the cursor position) is determined (by whatever means) and in which the text is being read aloud.

The Examiner's argument that use of Tognazzini while reading aloud would meet the originally claimed features (Office Action, pp. 4-5) shows a recognition that voice recognition software is not required to enable most of the claims in the application.

Moreover, Applicant does not agree with the Examiner's assertion that a person with ordinary skill in the art, with reference to the specification, would be unable to use computer systems and voice recognition software to identify the location at which text is being read.

Alignment of speech with text representations of speech is a topic for which substantial prior art exists. For example, U.S. Patent No. 6,076,059, filed in 1997 by Glickman, et al., discloses "Method for aligning text with audio signals." Glickman states (column 1, lines 22-30),

> Most known alignment methods are extensions of conventional computerized speech recognizers that operate in a very restricted mode to force recognition of the target text. Typically, the alignment is done in a left-to-right manner by moving a recognition window forward in time over the audio signals. The width of the window, measured in time, can be large enough to allow the recognizer to recover from local errors. This type of alignment is probably better characterized as forced recognition.

Thus, methods to identify the location in a text corresponding to the output of speech recognizing software were well known in the art at the time Glickman was filed. Moreover, Glickman discloses improvements over those existing methods, which also antedate the present invention and indicate that a person of ordinary skill in the art would have been able to use speech or voice recognition software (these terms are used interchangeably in the literature) to identify the position at which text is being read aloud.

Schena (Column 9, line 40), filed 11/7/97, discloses a scheme whereby a mouse may be disabled by a voice command (such that a selected graphical object is not moved when the mouse moves), but the cursor may move. Schena also points out (column 2, lines 33-37) that text may scroll at various rates in response to mouse input. Thus, Schena's use of voice controls to provide input that may substitute for mouse input is another example of prior art well known at the time of the invention, which provides further evidence that the present invention is enabled. Indeed, the Examiner states (O.A. pp. 5-6) that "it would have been obvious to a person of ordinary skill in the art at the time of the invention to have incorporated Schena into Tognazzini." Applicant respectfully points out that the same reasoning shows that one with ordinary skill in the art, aware of Schena, could have used this information together with the specification to make and use the claimed invention.

In 1994, Dragon Systems software commercially released its first version of its discrete word dictation-level speech recognition software (DragonDictate 1.0 for Windows). Dragon "Naturally Speaking" was released in 1997; this dictation software that was commercially available at the time the application was submitted converted continuous spoken language into computer-readable text. This software uses template-

training methods by which speech (voice) recognition software is trained to recognize the voice of a specific user. These template-training methods involve a user who reads a specific template aloud, and the software compares the spoken language with the written text, to determine how the user pronounces the words or syllables in the template. In order to do this, template training software must (in addition to the substantially more complex task of decoding the user's speech) also determine the location in the template at which text is being read.

U.S. patent number 6,212,498, filed in 3/1997 and awarded to Sherwood, et al., provides an additional reference to template-training methods as a method for enrollment in speech recognition. Sherwood discloses (Column 2, lines 41-49):

> In general, in another aspect, the invention features enrolling a user into a speech recognition system by displaying an enrollment text and an enrollment position within the enrollment text. When a user utterance is received, a determination is made as to whether a match exists between the user utterance and a portion of the enrollment text beginning at the enrollment position. The enrollment position is updated if a match exists, and the updated enrollment position is displayed.

Sherwood also cites earlier references on the topic of using enrollment texts to train speech recognizers. This is an additional example in which the location at which text is being read is identified using voice or speech recognition software with techniques available to an individual with ordinary skill in the art. Methods for accomplishing this were well understood at the time the application was filed, and were described in the cited patents and were made available commercially in the described software.

The Examiner also takes issue with the specification's use of the words "may be" on page 21, and interprets the use of these words, which define one of several embodiments within the scope of the subject matter described in the patent application, as

an indication that the invention has not been enabled. In the event the issue of enablement remains a basis for rejection, the applicant requests further clarification, as the term "may be" appears frequently in approved patent applications, such as Tognazzini (10 times), and Schena (12 times).

Thus, even when speech or voice recognition software is being used (as in claim 14 and 15), the present application does not claim any particular method of using this software to identify the location at which text is being read aloud, but instead provides a method for using this information (readily obtained by one of ordinary skill in the art, or even commercially purchased by one with no skill in the art) to control the speed at which text is presented. A practitioner with ordinary skill in the art would have been able to duplicate this invention at the time the specification was filed, as is required by the first paragraph of 35 U.S.C. 112.

Claim 13 is amended to use more definite language, and thus overcomes the rejection under 35 U.S.C. 112, second paragraph.

Claim 13 is rejected under 35 U.S.C. 112, 2nd paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 13 has been amended to use more definite language.

Claim rejections under 35 U.S.C. 103 are overcome, because Tognazzini is irrelevant to and teaches away from the amended claims, and is thus irrelevant to a determination of obviousness.

Independent claims 1, 19 and 20 are amended to include limitations on the way in which the rate of text presentation is controlled. These claims now describe a variable zone, and make clear that changes in the rate of text presentation occur while text is being read in the variable zone, as a function of the amount of time that text is being read in a variable zone. The term, "variable zone," encompasses both acceleration and deceleration zones.

Tognazzini describes a scheme by which the rate of text presentation is a function (whether linear or non-linear) of the screen position at which text is being read ("The scroll speed is adjusted as a function of that position X", col. 5, line 34). Tognazzini's meaning is further clarified in the ensuing paragraph (col. 5, lines 35-56). It is clear that this means that "the speed at which the text scrolls is a function of how far above the reference line or below the reference line the user's eyes appear to be gazing." (Tognazzini, lines 49-51). The term "function" means that there is only one rate for each position or distance X from the reference line. This is completely different from the present invention, in which the rate of text presentation in the neutral zone varies depending on what has previously transpired—the rate will be higher if text was previously read in an acceleration zone, and lower if text was previously read in a deceleration zone. Rate changes occur as a function not of distance, but of time. In the claimed invention, it is not possible to determine the rate of text presentation only with knowledge regarding the screen position at which text is being read (or distance from a reference line), as would be necessary if the present invention determined the rate of text presentation as a function of the screen position at which text is being read (as Tognazzini does).

Moreover, use of Tognazzini's scheme to produce a teleprompter would not work. A teleprompter has a fairly small area at which text is preferably read (usually directly behind a camera or at a location such that the speaker is looking in the direction of an audience). Thus, the ability of the present invention to permit the person who is reading aloud to vary the speed of text presentation while gazing in a preferred direction (towards the neutral zone) is critical to its function as a teleprompter. Using Tognazzini's method, the speaker would need to look in a different direction at times when text was read slower or faster, leading to unnatural head and eye movements inconsistent with natural speech.

In the Examiner's rejection of dependent claims 2-9, 11-12, Tognazzini's disclosure of a region on the display at which F3=0, X=-9 to top (column 5, line 42) is not a "neutral zone" as defined in the specification of the present invention. When F3=0, no text scrolling takes place at all, while in a neutral zone of the present invention, text may be scrolling, but is scrolling at a constant rate that is not changing. Tognazzini's demonstration of a non-linear function (column 5, line 41) $F=KX^2$ has nothing to do with acceleration or deceleration zones. As noted above, acceleration and deceleration are not functions (whether linear or non-linear is irrelevant) of distance or space, but are functions of time, and thus cannot even be approximated by a function like $F=KX^2$, where X is the distance from a reference line.

Dependent claims 2-18 are now patentable for the same reasons that independent claims 1, 19 and 20 are.

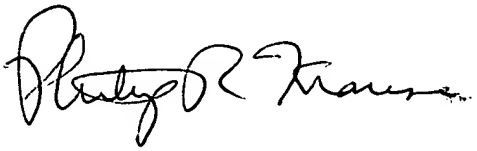
Conclusion

For all of the above reasons, the specification and claims are in proper form, and the claims all define patentably over the prior art. Therefore, this application is in condition for allowance, which action is respectfully solicited.

Conditional request for interview and constructive assistance

Based on the arguments herein, the specification and claims of this application are proper, definite, enabled, and define novel subject matter which is also non-obvious. If, for any reason, this application is not believed to be in full condition for allowance, the Applicant respectfully requests an interview at which the constructive assistance and suggestions of the Examiner pursuant to MPEP 2173.02 and 707.07 (j) are requested in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings. In particular, should the Examiner continue to believe that the application should be rejected under 35 U.S.C. 112, first paragraph for lack of enablement, Applicant requests this interview for the purpose of discussion, constructive assistance, and demonstration of the invention prior to any unfavorable final action on this application.

Very Respectfully,



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